UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

December 5, 2016

Brian Collins
U.S. Fish and Wildlife Service
San Diego National Wildlife Refuge Complex
P.O. Box 2358
Chula Vista, CA 91912

Subject: Otay River Estuary Restoration, San Diego Bay National Wildlife Refuge Draft Environmental Impact Statement, San Diego County, California [CEQ# 20160243]

Dear Mr. Collins:

The U.S. Environmental Protection Agency has reviewed the above-referenced document. Our review and comments are pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The Draft EIS evaluates the project-specific environmental impacts of restoring a mix of native habitats in the Otay River Floodplain and tidal wetlands at a currently operating salt pond known as Pond 15. The restoration would implement the habitat restoration objectives of the Service's 2006 San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan and is intended as mitigation for the Carlsbad Desalination Project construction and operations.

Based on our review, we have rated the preferred alternative and the document as *Environmental Concerns-Insufficient Information* (EC-2) (see the enclosed "Summary of EPA Rating Definitions"). While EPA supports the habitat enhancement and restoration goals of the project, we are concerned about the mobilization of DDT-contaminated soil and the consequent ecological effects that would result from the project. We recommend including additional information in the Final EIS to support the Service's conclusions about these effects. Our enclosed detailed comments further describe these recommendations, as well as others related to Clean Water Act Section 404 permitting, air quality, greenhouse gas emissions, and habitat maintenance issues.

We appreciate the opportunity to review and comment on this Draft EIS. When the Final EIS is available, please send one hard copy and one CD to the address above (mail code: ENF-4-2). If you have any questions, please contact me at (415) 947-4161, or contact Hugo Hoffman, the lead reviewer for this project. Hugo can be reached at 415-972-3929 or hoffman.hugo@epa.gov.

Sincerely,

Connell Dunning

Connell Dunning, Acting Manager
Environmental Review Section

See over!

Enclosure(s): (1) Summary of EPA Rating Definitions
(2) EPA's Detailed Comments

cc: Michelle Lynch, U.S. Army Corps of Engineers
Kate Huckelbridge, California Coastal Commission
Lisa Honma, San Diego Regional Water Quality Control Board

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment

Contaminants

EPA notes that, according to the Draft EIS and Appendix F, "Sampling and Analysis Reports," high levels of DDT and other contaminants were discovered in soils within the Otay River Floodplain east of Nestor Creek. Although the Fish and Wildlife Service (Service) is not proposing to excavate or directly disturb these soils, the Draft EIS explains that changes in hydrology resulting from the project would increase flood scour and erosion of contaminated soils thereby increasing DDT levels in the surrounding environment.

Mitigation Measures to Reduce Contaminant Mobilization

EPA strongly suggests that additional mitigation measures be considered for the purpose of minimizing mobilization of contaminated soils from the Otay River Floodplain. In Appendix I to the Draft EIS, "DDT Analysis," it is explained that flood events are expected to erode and scour contaminated soils, depositing them as sediments throughout portions of the San Diego Bay. In many sample locations, the DDT concentrations significantly exceed the National Oceanic and Atmospheric Administration (NOAA) sediment screening level[1] for which a high probability of toxicity from exposure is expected. The Service's analysis concludes that, although both of the action alternatives would mobilize more DDT-contaminated soils as compared with the "no action" alternative, the ultimate sediment concentrations and the thickness of deposited sediments layers will not result in significant impacts. However, the Draft EIS does not identify specific measures to reduce erosion and scour of DDT-contaminated soils.

Mitigation measures to minimize erosion are identified for the purposes of compliance with the required site-specific Stormwater Pollution Prevention Plan (SWPPP) for construction activities and to reduce erosion from "clean" stockpiles. SWPPP measures are required for areas disturbed by construction and expected to end at the completion of construction. Vegetation of stockpiles, and other measures to address erosion of this uncontaminated soil, will also end upon removal of the stockpiles.

The Service should adopt a monitoring and mitigation plan to address uncertainties about the effects of increased DDT in the surrounding environment resulting from the project and to ensure that impacts do not exceed those expected from analyses in the Draft EIS and supporting appendices. An adaptive management approach may be appropriate. Conclusions in the Draft EIS about less than significant effects from DDT derive from information presented in Appendix F, "Sampling and Analysis Reports," and Appendix I, "DDT Analysis." These analyses are supported by chemical and soil samples, hydrodynamic modelling, calculations of erodibility, and assumptions for average characteristics and behavior of organisms.

For Alternatives B and C, analyses conclude that the highest depth-proportional exposure to DDT expected for benthic organisms is between 7.1 and 7.9 micrograms per kilogram (µg/kg) dry-bulk concentration. This is slightly higher than NOAA's Effects Range-Low (ERL) quick screening levels[1] for DDT (1 µg/kg) and for total DDT+DDE+DDD (1.58 µg/kg). Additional analyses in the DDT Analysis include an assessment of ecological risk to birds, including the federally endangered light-footed Ridgeway's rail. The Draft EIS concludes that impacts to benthic organisms would be limited and

[1] NOAA's Screening Quick Reference Tables (SQuiRTs) are available at http://response.restoration.noaa.gov/environmental-restoration/environmental-assessment-tools/squirt-cards-faq.html

impacts to aquatic-dependent birds would be unlikely. Given the uncertainty inherent in many of the assumptions for the Service's analyses, a monitoring and mitigation plan should be developed to confirm the conclusions of these analyses and manage impacts.

Recommendation: In the Final EIS,

- Identify, evaluate the effectiveness of, and commit to long-term/permanent mitigation measures that would minimize the mobilization of DDT-contaminated soils resulting from the project;
- Consider additional soil contamination characterization at the floodplain site to better inform the ecological risk and to aid in developing mitigation plans;
- Develop and adopt a monitoring and mitigation plan for ecological effects from DDT to ensure that impacts to species remain less than significant;
- Consider additional post-construction sampling measures to monitor DDT in stormwater and suspended sediment following precipitation events, and in settled marine sediments;
- Monitor fish tissue concentrations for DDT and study egg shell thinning to determine trends in ecological effects; and,
- Prepare an Adaptive Management plan and clearly articulate the proposed project's management objectives and options for actions to meet these objectives. Include explicit and measurable objectives and well-defined triggers, thresholds, and associated action commitments.

According to the Draft EIS, a small portion of Pond 15 soil containing heavy metals would be capped within the pond using clean soil from the Otay River Floodplain Site. This is necessary to ensure that it would not be available to ecological receptors; however, it is not clear what thickness of soil would be required. In the absence of any data and/or modeling, it is common practice to require a minimum 3-foot cap to sequester contaminated sediments in aquatic and upland containment sites.

Recommendation: Specify the cap thickness necessary to ensure that heavy metals are not available to ecological receptors.

Ecological Risk to Fish

Since fish productivity of at least 1,717.5 kilograms per year is one of the objectives of the project, we recommend that effects to fish be considered in the assessment of ecological risk resulting from the project. The "DDT Analysis" appendix to the Draft EIS considers concentrations of DDT in forage fish tissue as an intermediate to bioaccumulation in aquatic-dependent birds, but does not evaluate effects to other fish.

Recommendation: In the Final EIS, provide additional assessment of ecological risk to fish populations and evaluate the impacts of any risk identified.

Baseline Contamination and Additional Sources of Contaminants

The Draft EIS models deposition of DDT-contaminated soils as sediment in portions of the Refuge, but it is not clear if the assessment of ecological risk in the Draft EIS includes consideration of already existing risk deriving from baseline contamination. The additional impacts of incremental additions of DDT to the surrounding environment should be analyzed in the Final EIS. The analysis in the Draft

EIS's appendix for "DDT Analysis" refers to previous Service studies[2] involving effects of contaminants, including DDT, to species in the San Diego Bay. The Draft EIS Appendix F1, "Sediment Characterization Sampling and Analysis Report," also acknowledges existing DDT in areas within the project. On page 35, the report states that

> *"DDTs and dieldrin were the only pesticides detected in salt pond sediments. DDTs were measured at four stations (13-07, 14-04A, 15-01, and 15-10). Station 15-01 exceeded the ERL values for 4,4'-DDE and total DDTs. Dieldrin was measured at four stations (12-10, 13-02, 13-07, and 14-04A). All concentrations were greater than the ERL value."*

Together these sources may provide a baseline from which to evaluate additional effects of DDT resulting from the proposed project.

> *Recommendation*: In the Final EIS, clarify whether baseline contamination and its effects were included in evaluation of impacts. If not, provide a cumulative effects analysis for contaminants mobilized by the project and their impacts.

We recommend that the Service confirm whether other potential sources of contaminants that may be affected by the project were included in the analysis for the Draft EIS. In particular, land adjacent to Refuge property within the Otay River Floodplain does not appear to have been evaluated for its potential contribution to impacts from the project. The Draft EIS states that "past agricultural and industrial uses within the project site boundaries and ongoing land uses adjacent to the San Diego Bay NWR are known to have introduced contaminants." (pg. 3.2-41) Figure 3 of Appendix F2 delineates the sampling performed for soil on Refuge property. Figure B1 of the DDT Analysis appendix depicts baseline flows in areas to the south and east of the project area and contiguous with, but outside the soil sampling area. Figures B2 and B3 of the DDT analysis indicate that increased flow velocities are expected at these adjacent, uncharacterized areas; however, it is unclear if the DDT Analysis includes potential mobilization of soil from these areas or if they are potentially contaminated. If these adjacent areas share a similar agricultural history with Refuge property east of Nestor Creek, they could constitute an additional source of contamination that would be mobilized by the project.

> *Recommendation*: In the Final EIS, evaluate the potential contribution of contaminated soils from areas adjacent to Refuge property and within the Otay River floodplain.

EPA recommends that the Service incorporate in the Final EIS additional available studies relevant to environmental concerns of the proposed action. For example, EPA is aware that independent studies related to the ecological risk of DDT from the proposed action are being made available by the California Coastal Commission's Scientific Advisory Panel (SAP) to inform the Commission's decision on its permit for the project. Incorporating information of this type may also facilitate approvals, permits, and/or certifications required for the project.

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[2] See Zeeman, C. S.K. Taylor, J. Gibson, A. Little and C. Gorbics. 2008. Characterizing exposure and potential impacts of contaminants on seabirds nesting at South San Diego Bay Unit of the San Diego Bay National Wildlife Refuge (Salt Works, San Diego Bay). Final Report. U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office. Carlsbad, California. 53 pp.; available at https://ecos.fws.gov/ServCat/DownloadFile/21542?Reference=23023
and
Zeeman, C. S.K. Taylor, J. Gibson, A. Little and C. Gorbics. 2008a. F&G Street Marsh Contaminants Investigation. Final Report. U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office. Carlsbad, California. 106 pp. available at https://ecos.fws.gov/ServCat/DownloadFile/21711?Reference=23192

Recommendation: For the Final EIS, gather and evaluate information relevant to the environmental impacts of the proposed action that has become available since publishing the Draft EIS. Evaluate whether this information affects the final decision regarding the proposed action, or need for additional protective measures.

Additional Resources

The Service may wish to consider EPA's Ecological Soil Screening Levels (Eco-SSLs) in future planning for Otay River Floodplain site east of Nestor Creek. The Eco-SSLs are EPA's Office of Solid Waste and Emergency Response (OSWER) Policy Directives and they represent concentrations likely to cause unacceptable ecological risk to terrestrial birds and mammals

Recommendation: Consider soil contamination in Refuge property within the Otay River floodplain in future planning or updated plans for the area. Interim Ecological Soil Screening Level documents can be found at https://www.epa.gov/chemical-research/interim-ecological-soil-screening-level-documents. In particular, the "DDT and Metabolites" Eco-SSL is OSWER Directive 9285.7-57 (April 2007) and is available at: https://www.epa.gov/sites/production/files/2015-09/documents/eco-ssl_ddt.pdf.

Clean Water Act Section 404

We recommend that the Final EIS clarify the permitting process for proposed activities within jurisdictional waters of the U.S. and include further analyses as necessary. If an Individual Permit is required, we recommend that the Final EIS include the Clean Water Act Section 404(b)(1) alternatives analysis and identify the Least Environmentally Damaging Practicable Alternative.

Including information sufficient to demonstrate compliance with the 404(b)(1) Guidelines in the Draft EIS improves efficiency and provides a more meaningful opportunity for the public to contribute timely and substantive input on the evaluation of alternatives, which could inform the decision-making process. For future Service projects subject to the NEPA process, which also require a CWA Section 404 permit, please consider providing such information in the Draft EIS.

Recommendation: Identify the LEDPA and include the results of the Clean Water Act Section 404(b)(1) alternatives analysis in the Final EIS.

Air Quality/Greenhouse Gas Emissions

Although the Draft EIS concludes that construction activities would not result in significant impacts to air quality, we encourage the Service to identify and consider mitigation measures for construction emissions that are not already included in the proposed action or alternatives per 40 CFR § 1502.14(f), "Alternatives including the proposed action."

We note that, as presented in the Draft EIS, both the conveyor and haul truck transport options result in lower criteria air pollutant emissions, take less time to complete, and would reach restoration goals sooner than the pipeline option due to the time required for soil consolidation if material is transported as a slurry. Among the conveyor and haul truck options, the conveyor would result in more greenhouse gas emissions than the haul truck option. It appears that the largest contributor to greenhouse gas (GHG) and criteria pollutant emissions from any of the construction options is from diesel generators. We encourage the Service to explore alternatives to diesel generators, which may afford the opportunity to reduce air pollution and GHG emissions, and other impacts from construction activities.

Recommendations: In the Final EIS, consider use of reasonable mitigation measures to reduce criteria air pollutant and GHG emissions from construction activities, such as:

- Energy and fuel-efficient or alternative fueled fleets;
- Energy efficiency measures, including lighting;
- Reducing reliance on diesel generators by using grid-based electricity or alternative fuel generators (including natural gas generators and dual-fuel generators using a mix of natural gas or propane and diesel); and
- Requiring use of Tier 4[3] exhaust emissions standards for heavy-duty nonroad compression-ignition engines (e.g., non-road trucks, construction equipment, etc.).

Revegetation/Habitat Maintenance

The Draft EIS considers two methods for revegetation at the Otay River Floodplain: a custom seed mix derived from the project area and Diegan coastal sage scrub seed mix from a commercial seed supplier. To the extent feasible, EPA recommends site-specific custom seed mixes for revegetation because local plants are adapted to site-specific conditions and may therefore establish more successfully, while also promoting the conservation of local biodiversity.

Recommendation: To the extent feasible, use a site-specific custom seed mix to facilitate successful revegetation.

The Draft EIS and Appendix C, the "Draft Final Restoration Plan," explain that control of invasive plant species would be required; however, no information is provided as to what methods would be used. EPA encourages an integrated pest management approach that that prioritizes non-chemical methods and promotes least toxic pest management methods.

Recommendation: In the Final EIS, identify the herbicides that could be used for the project, and the trigger(s) for, and potential impacts of, their use. Specify the precautions that would be taken to ensure against detrimental effects on non-target species, including special status species. EPA recommends that herbicides be used in the context of an integrated pest management program, consistent with the Service's policy for Pest Management.[4]

Endangered Species Act Consultation

The Service has committed to completing Intra-Service consultation and consultation with NOAA Fisheries for compliance with Section 7 of the Endangered Species Act; however, it is not clear if the Draft EIS includes all of the proposed mitigation measure for listed species that were developed in the course of consultation.

Recommendations:

- In the Final EIS, or as appendices to the Final EIS, include the results of the Intra-Service and NOAA Fisheries consultations for potential effects to listed species. Incorporate into the Final EIS mitigation measures identified during consultations.
- Consider potential effects of DDT when consulting for listed species.

[3] See EPA's "Emission Standards Reference Guide for On-road and Nonroad Vehicles and Engines" at http://www.epa.gov/otaq/standards/nonroad/nonroadci.htm.

[4] Available at https://www.fws.gov/policy/569fw1.html

Floodplains

The Draft EIS mentions Executive Order (EO) 11988, *Floodplain Management*, but does not refer to the updates made by the January 30, 2015 EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input.* On October 8, 2015 the interagency Water Resources Council approved revised Guidelines for Implementing EOs 11988 and 13690. These guidelines explain the use of natural systems, ecosystem processes, and nature-based approaches for identifying alternatives, and provide other technical guidance for implementing EO 11988 and the Federal Flood Risk Management Standard (FFRMS). More information can be found at http://www.fema.gov/media-library/assets/documents/110377. We recommend that the Service consider EO 13690 and the revised Guidelines in their preparation of future NEPA documents.